

# CORROSION ABSTRACTS

As Published in

## CORROSION Volume 15-1959

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# CORROSION

## VOLUME 15

JANUARY 1—DECEMBER 31

1959

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Comparison of Corrosion Engineering or Materials Engineering Functions in Various Chemical Plants by L. W. Gleekman. Corrosion, Vol. 14, 540t (1958) Nov.

Entry under heading "Investigates Paint Problems" for General Chemical Div., Allied Chemical & Dye, Camden, New Jersey, should read:

X  
instead of No

The letter "X" will indicate that this company *does* investigate paint problems.

Zinc in Marine Environments by E. A. Anderson. Corrosion, Vol. 15, No. 8, 409t-412t (1959) August.

On page 411t, Tables 10 and 11 at bottom of this errata page should be substituted for Tables 10 and 11.

On page 411t, column 1, second line from the bottom should be changed to read:

vanized sheets were perforated after 26

Design and Materials for Reduced Pump Corrosion by Jack E. Piccardo. Corrosion, Vol. 15, No. 9, 473t-476t (1959) September.

Page 476t, middle column, first two lines of J. E. Piccardo's reply to A. V. Morrison should read as follows:

1. Cavitation erosion is a dynamic action within the fluid and cannot be over-

Effects of Foreign Metals on Corrosion of Titanium in Boiling 2M Hydrochloric Acid by Roger Buck, III, Billy W. Sloope and Henry Leidheiser, Jr. Corrosion, Vol. 15, 566t-570t (1959) Nov.

On page 570t, column 3, two sets of numbered references appear. The top set, numbered one through seven with all numbers in parenthesis, apply to Table 4 of the article rather than to the text. The six references immediately below this group apply to the text.

Abstract Section. Pages of the Corrosion Abstracts section in the January and February 1959 issues were numbered incorrectly in the lower outside margins where the "a" series numbers are carried. The January issue should have begun with 1a and ended with 18a. The February issue should have begun with 19a and ended with 28a. Corrected numbers are reproduced below for pasteup correction of these two issues:

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TABLE 11—Calculated and Observed Coating Life

Location	Weight of Coating (a)	Time to 100% Rust—Years		Time to Perforation of Black Iron—Years
		Observed	Calculated	
Key West.....	2.5	> 26	99	..
Key West.....	2.0	> 26	79	..
Key West.....	1.5	> 26	60	..
Key West.....	1.25	> 26	50	..
Key West.....	0.75	> 26	30	..
Key West.....	None	....	..	3.9
Sandy Hook.....	2.5	> 25	30	..
Sandy Hook.....	2.0	> 25	24	..
Sandy Hook.....	1.5	17.9	18	..
Sandy Hook.....	1.25	15.2	15	..
Sandy Hook.....	0.75	11.3	9	..
Sandy Hook.....	None	....	..	7.3 (b)
State College.....	2.5	> 32	50	..
State College.....	2.0	> 32	40	..
State College.....	1.5	> 32	30	..
State College.....	1.25	> 32	25	..
State College.....	0.75	23.5	15	..
State College.....	None	....	..	26

(a) In ounces per square foot of sheet.

(b) Average of sheets showing failure—final average may be higher.

TABLE 10—Atmospheric Corrosion of Corrugated Galvanized Sheets

Location	Steel Gauge	Weight of Coating (a)	Time in Years To—				Perforation from Below (b)
			First Rust	100% Rust	Sheet Perforation	Rust (b) Spots	
Key West.....	22	None	.....	.....	3.9	.....	.....
Key West.....	16	2.5	> 26	> 26	> 26	> 26	21.9-> 26
Key West.....	22	2.5	> 26	> 26	> 26	25.5	24.3-> 26
Key West.....	22	2.0	> 26	> 26	> 26	22.8	25.5
Key West.....	22	1.5	> 26	> 26	> 26	19.8	21.5
Key West.....	22	1.25	21.5-> 26(c)	> 26	> 26	19.8	22.8
Key West.....	22	0.75	18.3(d)	> 26	> 26	12.5(d)	17.5(d)
Key West.....	28	0.75	18.7(d)	> 26	> 26	13.1(d)	18.9(d)
Sandy Hook.....	22	None	.....	.....	7.3(d)	(e)	(e)
Sandy Hook.....	16	2.5	11.8	> 25	> 25	(e)	(e)
Sandy Hook.....	22	2.5	13.1	> 25	> 25	(e)	(e)
Sandy Hook.....	22	2.0	9.9	> 25	> 25	(e)	(e)
Sandy Hook.....	22	1.5	7.6	17.9	> 25	(e)	(e)
Sandy Hook.....	22	1.25	6.8	15.2	> 25	(e)	(e)
Sandy Hook.....	22	0.75	4.8	11.3	> 25	(e)	(e)
Sandy Hook.....	28	0.75	4.9	11.1	> 25	.....	.....
State College.....	22	None	.....	.....	26	(e)	(e)
State College.....	16	2.5	24.6	> 32	> 32	(e)	(e)
State College.....	22	2.5	26.3(d)	> 32	> 32	(e)	(e)
State College.....	22	2.0	22.5	> 32	> 32	(e)	(e)
State College.....	22	1.5	17.1	> 32	> 32	(e)	(e)
State College.....	22	1.25	14.6	> 32	> 32	(e)	(e)
State College.....	22	0.75	10.0	23.5	> 32	(e)	(e)
State College.....	28	0.75	11.1	24.0	> 32	(e)	(e)

(a) In ounces per square-foot of sheet coated both side.

(b) Rust spots and perforation due to corrosion from below penetration zinc coating on upper side.

(c) Only one sheet showed first rusting—remaining 16 showed no rust in 32 years.

(d) Average of sheets showing failure—final average may be higher.

(e) Corrosion from below did not occur at this site.



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2. Communications, power.
3. Agriculture, beverage, dairy, fermentation, food, sugar, starch.

4. Fuel, solids; fuel, gases; petroleum refining and production, rubber, atomic energy.

5. Ceramics, glass, pulp and paper, wood products.

6. Laundry soap and detergents, textile.

7. Graphic arts, instruments, jewelry, photography.

8. Chemical manufacturing, distilled liquor, electroplating, leather and tanning, metal fabrication and finishing, pharmaceuticals.

9. Aircraft, automotive, pipe line, railroad, shipping.

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# INDEX TO CORROSION ABSTRACTS, Volume 15, 1959

Numbers in this table are those printed in the lower outer margins of the Corrosion Abstract Section, cumulative through the volume. Topical headings in the left column are those of the first and second subdivisions of the NACE Abstract Filing Index, revision of September 1952. This index may be found reproduced in full as part of the

Index to Technical Material Published in Corrosion in the December, 1955 issue of Corrosion. Principal difference between this index and that published in the December, 1951 issue is the addition of designation 6.11 Design, Influence on Corrosion. Refer to footnotes for changes in 8, Industries not affecting validity of indexing of previous abstracts.

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\* The following designations apply to the several groups listed under 8, INDUSTRIES:

1. Air conditioning, architecture and building, refrigeration, sewage and water.
2. Communications, power.
3. Agriculture, beverage, dairy, fermentation, food, sugar, starch.

4. Fuel, solids; fuel, gases; petroleum refining and production, rubber, atomic energy.
5. Ceramics, glass, pulp and paper, wood products.

6. Laundry soap and detergents, textile.
7. Graphic arts, instruments, jewelry, photography.

8. Chemical manufacturing, distilled liquor, electroplating, leather and tanning, metal fabrication and finishing, pharmaceuticals.
9. Aircraft, automotive, pipe line, railroad, shipping.
10. Explosives, metallurgy, mining ordnance and war materials, other.

# CORROSION

*Official Publication*

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1959



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# ERRATA—CORROSION, Volumes 14 and 15

Comparison of Corrosion Engineering or Materials Engineering Functions in Various Chemical Plants by L. W. Gleekman. Corrosion, Vol. 14, 540t (1958) Nov.

Entry under heading "Investigates Paint Problems" for General Chemical Div., Allied Chemical & Dye, Camden, New Jersey, should read:

X  
instead of No

The letter "X" will indicate that this company *does* investigate paint problems.

Zinc in Marine Environments by E. A. Anderson. Corrosion, Vol. 15, No. 8, 409t-412t (1959) August.

On page 411t, Tables 10 and 11 at bottom of this errata page should be substituted for Tables 10 and 11.

On page 411t, column 1, second line from the bottom should be changed to read:

vanized sheets were perforated after 26

Design and Materials for Reduced Pump Corrosion by Jack E. Piccardo. Corrosion, Vol. 15, No. 9, 473t-476t (1959) September.

Page 476t, middle column, first two lines of J. E. Piccardo's reply to A. V. Morrison should read as follows:

1. Cavitation erosion is a dynamic action within the fluid and cannot be over-

Effects of Foreign Metals on Corrosion of Titanium in Boiling 2M Hydrochloric Acid by Roger Buck, III, Billy W. Sloope and Henry Leidheiser, Jr. Corrosion, Vol. 15, 566t-570t (1959) Nov.

On page 570t, column 3, two sets of numbered references appear. The top set, numbered one through seven with all numbers in parenthesis, apply to Table 4 of the article rather than to the text. The six references immediately below this group apply to the text.

Abstract Section. Pages of the Corrosion Abstracts section in the January and February 1959 issues were numbered incorrectly in the lower outside margins where the "a" series numbers are carried. The January issue should have begun with 1a and ended with 18a. The February issue should have begun with 19a and ended with 28a. Corrected numbers are reproduced below for pasteup correction of these two issues:

1a	2a	3a	4a	5a	6a	7a
8a	9a	10a	11a	12a	13a	14a
15a	16a	17a	18a	19a	20a	21a
22a	23a	24a	25a	26a	27a	28a

TABLE 11—Calculated and Observed Coating Life

Location	Weight of Coating (a)	Time to 100% Rust—Years		Time to Perforation of Black Iron—Years
		Observed	Calculated	
Key West.....	2.5	> 26	99	..
Key West.....	2.0	> 26	79	..
Key West.....	1.5	> 26	60	..
Key West.....	1.25	> 26	50	..
Key West.....	0.75	> 26	30	..
Key West.....	None	...	..	3.9
Sandy Hook.....	2.5	> 25	30	..
Sandy Hook.....	2.0	> 23	24	..
Sandy Hook.....	1.5	17.9	18	..
Sandy Hook.....	1.25	15.2	15	..
Sandy Hook.....	0.75	11.3	9	..
Sandy Hook.....	None	...	..	7.3 (b)
State College.....	2.5	> 32	50	..
State College.....	2.0	> 32	40	..
State College.....	1.5	> 32	30	..
State College.....	1.25	> 32	25	..
State College.....	0.75	23.5	15	..
State College.....	None	...	..	26

(a) In ounces per square foot of sheet.

(b) Average of sheets showing failure—final average may be higher.

TABLE 10—Atmospheric Corrosion of Corrugated Galvanized Sheets

Location	Steel Gauge	Weight of Coating (a)	Time in Years To—				
			First Rust	100% Rust	Sheet Perforation	Rust (b) Spots	Perforation from Below (b)
Key West.....	22	None	.....	.....	3.9	.....	.....
Key West.....	16	2.5	> 26	> 26	> 26	> 26	21.9—> 26
Key West.....	22	2.5	> 26	> 26	> 26	25.5	24.3—> 26
Key West.....	22	2.0	> 26	> 26	> 26	22.5	25.5
Key West.....	22	1.5	> 26	> 26	> 26	19.5	21.5
Key West.....	22	1.25	21.5—> 26(c)	> 26	> 26	19.5	22.5
Key West.....	22	0.75	18.3(d)	> 26	> 26	12.5(d)	17.5(d)
Key West.....	28	0.75	18.7(d)	> 26	> 26	13.1(d)	18.9(d)
Sandy Hook.....	22	None	.....	.....	7.3(d)	(e)	(e)
Sandy Hook.....	16	2.5	11.8	> 25	> 25	(e)	(e)
Sandy Hook.....	22	2.5	13.1	> 25	> 25	(e)	(e)
Sandy Hook.....	22	2.0	9.9	> 25	> 25	(e)	(e)
Sandy Hook.....	22	1.5	7.6	17.9	> 25	(e)	(e)
Sandy Hook.....	22	1.25	6.8	15.2	> 25	(e)	(e)
Sandy Hook.....	22	0.75	4.8	11.3	> 25	(e)	(e)
Sandy Hook.....	28	0.75	4.9	11.1	> 25	.....	.....
State College.....	22	None	.....	.....	26	(e)	(e)
State College.....	16	2.5	24.6	> 32	> 32	(e)	(e)
State College.....	22	2.5	26.3(d)	> 32	> 32	(e)	(e)
State College.....	22	2.0	22.5	> 32	> 32	(e)	(e)
State College.....	22	1.5	17.1	> 32	> 32	(e)	(e)
State College.....	22	1.25	14.6	> 32	> 32	(e)	(e)
State College.....	22	0.75	10.0	23.5	> 32	(e)	(e)
State College.....	28	0.75	11.1	24.0	> 32	(e)	(e)

(a) In ounces per square foot of sheet coated both side.

(b) Rust spots and perforation due to corrosion from below penetration zinc coating on upper side.

(c) Only one sheet showed first rusting—remaining 16 showed no rust in 32 years.

(d) Average of sheets showing failure—final average may be higher.

(e) Corrosion from below did not occur at this site.